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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,241	07/21/2003	Tamer Kadous	020192C1	7570

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

BAYARD, EMMANUEL

ART UNIT PAPER NUMBER

2631

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,241

Applicant(s)

KADOUS, TAMER

Examiner

Emmanuel Bayard

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-46 is/are rejected.
- 7) ☒ Claim(s) 34-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/2/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 1-12 been renumbered as 34-46.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 34-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Barton et al U.S. patent No 6,449,246 B1.

As per claims 1, 9 and 12, Barton et al teaches a method of determining symbol streams in a multi-channel communication system, comprising: receiving a plurality of N_r input symbol streams (see col.7, lines 53-67 and col.8, lines 3-20); processing the plurality N_r input symbol streams to provide N_t detected symbol streams where $N_t \geq 1$ (see col.7, lines 63-67 and col.8, lines 1-50); and recovering a selected detected

symbol stream from the NT detected symbol streams (see col.2, lines 50-58 and col.13, lines 35-41 and col.14, lines 43-60 and col.22, lines 27-42).

As per claim 2, Barton et al does teach wherein the processing is spatial processing (see col.5, lines 44-45 or fig.10 element 450).

As per claim 3, Barton et al does teach wherein the processing is space-time (see fig.2).

As per claim 4, Barton et al does teach wherein the recovering includes demodulating (see col.2, lines 50-58)

As per claim 5, Barton et al inherently teach wherein the recovering includes de-interleaving.

As per claim 6, Barton et al does teach wherein the recovering includes decoding (see col.19, lines 30-31).

As per claims 7 and 10, Barton et al does teach further comprising: estimating interference due to the recovered symbol stream (see fig.10 elements 435, 436 and col.17, lines 30-31); and canceling estimated interference (see col.4, lines 43-55) from the received plurality of NR input symbol streams, thereby creating a new plurality of NR input symbol streams.

As per claims 8 and 11, Barton et al does teach: determining whether all the NT detected symbol streams have been recovered (see fig.17 and col.2, lines 50-58 and col.13, lines 35-41 and col.14, lines 43-60 and col.22, lines 27-42); and iterating (see fig.17 element 1750) through the steps of processing, recovering, estimating, and canceling until all the NT detected symbol streams) have been recovered.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Itokawa U.S. Patent No 6,477,317 B1 teaches a video reproducing apparatus, which de-multiplexes a plurality of video.

Chang et al U.S. Patent No 6,271,946 B1 teaches an optical layer.

Sandin U.S. Patent No 6,067,315 teaches a method and apparatus for coherently averaged power.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)
Alternate Friday off.

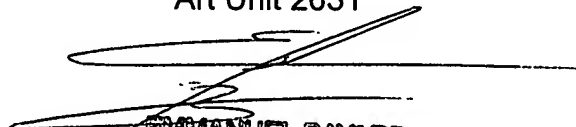
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2631

Monday, March 07, 2005



EMMANUEL BAYARD
PRIMARY EXAMINER